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## Radegen Biotechnology

Creative work: Skunkworks project open source.

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A **molecular asset** can be defined as information that can be used to make a molecular tool such as a restriction enzyme and/or workflow solutions that is presented in a technical writing or technical drawing as a Creative Concept Work (a Creative Common). This metaphysical concept is a tool that defines a work meant to protect licensing rights of Creative Concepts using Creative Commons licensing. Much like the popular card game “Cards Against Humanity” protects its right to make a profit from intellectual property using this type of licensing, Radegen Biotechnology will use rational based on this successful implementation. The game Cards Against Humanity protects the ownership of intellectual property by Creative Commons licensing by publicly publishing their work, (PDF files of playing cards) and allowing users to use these files as they wish. A customer can print a card on their own or they can buy them from any major department store next to the Uno cards in the toy section. These files or any of their content can **not** be used by a commercial entity for commercial use, even if a profit is not made. The files can be used by not for profit organizations under the Creative Commons licensing restrictions. The owner of the Creative Commons license has the option of using the Creative Common. In the case of Radegen Biotechnology, the creative common is protected from being reproduced on any medium, including the molecular form for commercial use. Commercial organization can inquire if a Creative Commons is available for licensing under terms that should be agreed to via a contract and usually include an exchange of monies. Non-profit organizations can use the creative concept freely.

Radegen Biotechnologies is committed to the synthetic biology revolution and will produce a full suite of synthetic enzymes based on the publicly available sequence library of off patent open source molecular asset library on: <https://openbioeconomy.org/projects/open-enzyme-collections/>.

Synthetic biology is a novel discipline focused on the application of the collective molecular biology knowledge accumulated up to date using synthetic DNA as the starting material for genetic information. The revolutionary nature of this approach can not be

overstated since one can virtually make any DNA sequence based on sequence data available on NCBI data bases. This provides a research and development scientist the ability to test nature's library of proteins without needing to go to the middle of a South American jungle to find a special frog to take its DNA to explore the utility of Dtd enzymes that may be coded by that special species of frog. Nature's library can be tested by a trained scientist with access to NCBI databases and the ability to order synthetic DNA constructs or generate synthetic DNA constructs in lab. This is RadegenBio's approach for developing new molecular technology.

**The very fact that Radegen Biotechnology has developed and is in the process of further expanding a toolkit composed entirely of enzymes generated from a synthetic genetic template makes the toolbox, the concept and the product category completely novel and protected by Creative Commons licensing by this**

**Creative Concept Work**. For the first time, the scientific community will have the opportunity to implement the tenets of synthetic biology by using tools made synthetically. Since this tool kit has been used for the past several decades, successful development, implementation, sales and customer application of these tools will prove that this model of R&D is feasible and worth dedicated pursuit. Comparison with identical tools currently on the market, produced from a natural template provides a benchmark for comparison. Despite the likelihood of success being extremely high, implementation of this model for developing a suite of molecular solutions will demonstrate the feasibility of such a model.

This document presents the creative concept of the commercialization of bona fide synthetic enzymes and synthetic molecular technologies from the synthetic biology paradigm of “rational design” and use of synthetic genetic templates for producing a product. This creative concept specifically describes the commercialization of fundamental enzymes and newer systems such as Cell Free Lysate technology.

These tools will be developed based on the Open Bio Economy catalog of sequences made available on the website listed above. The Creative Concept being described here is the production and sale of physical molecular tools based on open source molecular assets.

### I. Restriction Enzymes and accessories

- A. BsaI
- B. BsmAIM1M2
- C. SapI
- D. M1.SapI
- E. M2.SapI
- F. BsmBI
- G. M.XbaI
- H. SpeI
- I. EcoRI
- J. M.EcoRI
- K. PstI
- L. M.PstI
- M. NotI
- N. M.NotI
- O. SfI
- P. M.SfI
- Q. EcoRV
- R. M.EcoRV
- S. NcoI

- T. M.NcoI
- U. HindIII
- V. M.HindIII
- II. Off-Patent DNA Polymerases
  - A. 9°N-7 DNA Polymerase
  - B. DNA Polymerase I, Large (Klenow) Fragment
  - C. DNA Polymerase I, Large (Klenow Fragment (3' → 5' exo-))
  - D. KlenTaq1 Polymerase
  - E. KOD DNA Polymerase
  - F. KOD DNA Polymerase (exo-)
  - G. Pfu DNA Polymerase
  - H. Pwo DNA polymerase
  - I. Pyrococcus Sp. Heat-Stable (exo-) DNA polymerase
  - J. Pyrococcus Sp. Heat-Stable DNA polymerase
  - K. Taq DNA polymerase
  - L. Tli DNA polymerase
  - M. Tli DNA polymerase (exo-)
  - N. Tth DNA polymerase
  - O. Bst DNA Polymerase, Full Length
  - P. Bst DNA Polymerase, Large Fragment
  - Q. Bsu DNA Polymerase I, Large Fragment
  - R. phi29 DNA polymerase
  - S. 9°N-7 DNA Polymerase chain terminating
  - T. Sulfolobus DNA Polymerase IV
  - U. T4 DNA Polymerase
  - V. T7 DNA Polymerase (unmodified)
  - W. T5 DNA Polymerase
- III. RNA Polymerase
  - A. T3 RNA Polymerase
  - B. T7 RNA Polymerase
  - C. SP6 RNA Polymerase
- IV. Ligases
  - A. T4-DNA Ligases
  - B. E. Coli DNA Ligases
  - C. DNA Ligases III
  - D. DNA Ligases IV
  - E. 9°N-7 DNA Ligase
  - F. Pfu DNA ligase
  - G. Taq DNA ligase
  - H. TS2126 RNA Ligase 1
  - I. T4 RNA Ligase 2 T4 RNL2
  - J. Truncated T4 RNL2
  - K. T4 RNA Ligase 1
- V. Reverse transcriptase
  - A. Moloney Murine Leukemia Virus (MMLV) Reverse Transcriptase (RNase H deactivated by 3 mutations)
  - B. Moloney Murine Leukemia Virus (MMLV) Reverse Transcriptase RNaseH - (lacking RNaseH domain)
  - C. Avian Myeloblastosis Virus (AMV)/Myeloblastosis Associated Virus (MAV) Reverse Transcriptase
  - D. Epicentre's MonsterScript™ RT
  - E. Thermus thermophilus (Tth) RT
  - F. RTX
  - G. SuperscriptIII (MMLV mutated for thermostability and fidelity)
- VI. Other
  - A. DpnI
  - B. Bst HF
  - C. ETSSB
  - D. T5 Exonuclease
  - E. Tth DNA Ligase K294R

- F. dDNK from drosophila
- G. TEV protease
- H. T4 PNK
- I. T4 BGT
- J. T7EI
- K. T4 PGD
- L. T4 g32
- M. P45
- N. Bovine DNNT
- O. DNA Topoisomerase
- P. Lambda red operon
- Q. UDG
- R. Fpg
- S. Endonuclease IV E. Coli
- T. Endonuclease VIII E. Coli
- U. Exonuclease III E. Coli

This is a working catalog of solutions we will develop into genetic constructs and cell lines expressing the character of the creative common presented here. This character is personified by the character of open source altruism since the protocols for producing these solutions in a non for profit setting will be available online. It is the goal of Radegen Biotechnology to make improvements on this off patent technology and these improvements will always be incorporated into production items under the same name, at the same price and protocols will be updated to reflect the nature of a production item. Since an end user may often time have an improvement, an item presented as a creative concept can be improved upon and relicensed under the same original Creative Commons license. The improved creative concept is then reviewed by Radegen Biotechnology for implementation into the production item.

This model for maintaining an asset library and producing production items from these assets ensures that everyone is always using state of the art Radegen Biotechnology.

#### Pennies from Heaven

“Every time it rains, it rains pennies from heaven  
 Don't you know each cloud contains pennies from heaven?  
 You'll find your fortune's fallin' all over the town  
 Be sure that your umbrella is upside down

Trade them for a package of sunshine and flowers  
 If you want the things you love, you must have showers  
 So, when you hear it thunder, don't run under a tree  
 There'll be pennies from heaven for you and me

Every time, every time it rains, it's gonna rain pennies from heaven  
 Don't you know every cloud contains lots of pennies from heaven  
 You'll find your fortune's fallin', baby, all over the town  
 Be sure, be sure that your umbrella is upside down

Trade them for a package of sunshine and flowers  
 If you want the things you love, you've got to have showers  
 So, when you hear it thunder, don't run under a tree  
 There'll be pennies from heaven for you and me”  
 - as performed by Frank Sinatra

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